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No Resting Place

BRITAIN has had its first signs of the winter and, because in this country pests are traditionally associated with the spring and summer months, there appears to be a lull in pest control operations. However, the British Pest Control Industry cannot ignore the vast pest problems of other countries for despite our relative isolation the Industry can and does make an important contribution towards the control of these pests, many of which are cosmopolitan and need to be tackled on an International basis.

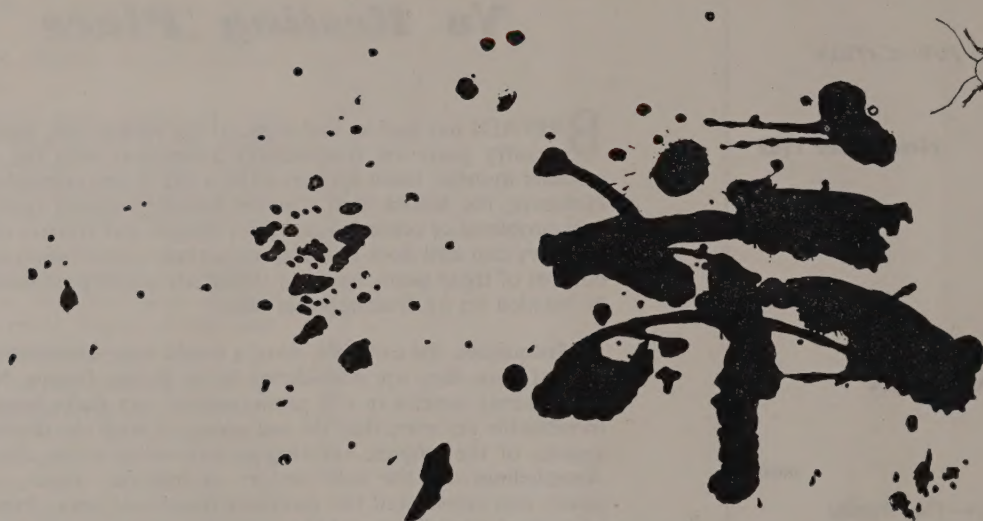
Mosquitoes, for example, have a world wide distribution and as a pest of man they are considered to be Public Enemy No. 1. The bloodthirsty species in sub arctic regions can make large areas uninhabitable yet even they do not compare with the disease carrying species of the tropics, sub-tropics and other warm climates. The Anophelines are the sole vectors of malaria, which, until recent years, was considered the foremost disease of man, from the point of view of prevalence and the mortality, sickness and economic loss that it produces. It is still a serious problem in many countries.

The filarial worms (*Wuchereria spp.*) which are important human parasites in warm damp climates e.g. coastal areas of Arabia, India, China, Queensland, West and East Indies etc., are transmitted by mosquitoes.

The filterable virus causing Yellow Fever, now happily confined to forested areas of Tropical America and Central Africa, is transmitted by mosquitoes as are the viruses causing dengue and encephalitis (which is also transmitted by other arthropods). Yellow Fever and Dengue are primarily diseases of monkeys and similar forest mammals and these mammals form a reservoir pool of infection which would be very difficult to remove. Encephalitis which occurs in many parts of the world is yet again a disease of animals transmittable to man and reservoir hosts again set a problem for control methods.

The tremendous extent of the mosquito problem can be judged from the vast amount of literature which has been published on the subject. It is a problem which although world wide has characteristics that vary from location to location. Authorities such as W.H.O. carry out valuable work in collecting and correlating information from various sources, not only with regard to mosquito borne diseases but also with regard to other pest problems. However, more research work and organisation is required especially when other insects are considered. Ticks, for example, are second only to mosquitoes as carriers of human diseases and as carriers of animal diseases they are without equal. Tsetse flies by virtue of being the vectors of trypanosomes have prevented the colonisation of vast tracts of the African continent. Tabanids, Sandflies, Midges, Lice, Fleas and others transmit important human diseases. Considering these and the myriad animal and weed pests of agriculture it can be seen that there is a great amount of work to be done. In this world of increasing communications and trade no country—Britain included—can divorce themselves from the problems of others.

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CONTROL

AGRICULTURAL SPRAYS—

THE WETTING PROBLEM WITH PARTICULAR REFERENCE TO SYSTEMIC INSECTICIDES

A preliminary note by Dr. M. A. PHILLIPS, F.R.I.C., M.I.Chem.E.

IT is now well recognised that effective pesticide formulations need to contain a wetting or spreading substance; this has not always been the case. In selecting a suitable wetter, consideration has to be given to the purpose of the composition, type of wetting substance, volume of spray per acre (high, medium or low), type of plant (waxy or non-lipophilic leaf), type of composition (insecticidal or other pesticidal duty), phytotoxicity etc.

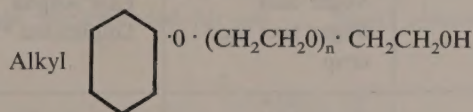
The selection of appropriate wetter is not made easier by the fact that there are several hundreds of commercial materials to choose from and that until recently, the chemical composition and even the type (anionic, non-ionic etc.) has not been made clear by manufacturers. However, pressure from users and particularly from the Ministry of Agriculture has to a large extent corrected this and it is now possible to identify at least the type and frequently the chemical composition of any given wetter and most good manufacturers are co-operative if

asked for information.* However, most of the commercial wetters are variable mixtures and it does not follow in all cases that deliveries are of standard materials with invariable properties.

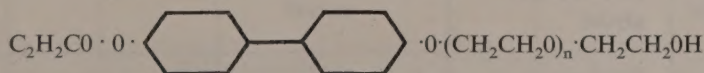
The various commercial wetters may be divided practically into two main classes (anionic or non-ionic, for cationic substances are not used, being too expensive and also tending to be too phytotoxic).

Of the anionics, sulphonated alcohols of the sodium lauryl sulphate and the recently introduced sodium alkyl sulpho-succinates are best known. The former is not greatly used since it is not, relatively, a very powerful surfactant, its water solubility is low and it tends to be phytotoxic at concentrations necessary to achieve adequate spreading or wetting. The alkyl sulpho-succinates (alkyl being octyl and nonyl) being anionic surfactants have a tendency to phytotoxicity, although at the

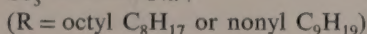
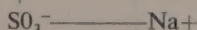
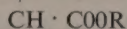
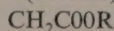
Alkyl aryl polyethylene glycol condensates
(non-ionics)



Benzoyl p-oxy diphenyl polyethylene glycol condensate
(non-ionics)



Sulpho-succinates
(anionic)



* One sound piece of advice is never to purchase any wetter unless full information about its type and constitution is vouchsafed or is known.

concentrations used in the field, this need not be serious and they have been used with reasonable satisfaction with contact insecticidal sprays, for example on fruit, and may be used when high volume such as are customary with fruit spraying (100-300 g.p.a.), is employed. For root crops, where the tendency is to use lower volumes, even as low as 20-30 g.p.a., the sulpho-succinates cannot be considered to be satisfactory and many failures have been recorded in field work with insecticides using these wetter additives, particularly in hot, dry seasons.

For systemic insecticides in particular, the sulpho-succinates cannot be recommended; the problem here is not only to obtain complete coverage (and indeed with a systemic such complete coverage is not essential) but

to obtain rapid penetration into the leaf (and also, of course, into the root, from spray overspill). For such purposes, field experience has shewn that anionics are far preferable and that the use of such materials enables root crops to be effectively sprayed against aphid pests and other biting insects even at low volumes.**

A well-known German systemic insecticide uses, as wetter, benzoyl p-oxy diphenyl polyglycol ether conden-

***This is an elastic term but it seems to be generally accepted that low volume for root crops may be about 25-30 g.p.a., medium 50-60 g.p.a., and high 100 g.p.a. and over.*

TABLE I

Legend:— A = good to very good.

B = fair only.

C = poor.

| No. | Insecticide | Wetter | Crop | Location of Trials | Date of Spraying | Results |
|-----|---|--|------------------------------------|------------------------------|--------------------------|----------|
| 1. | Fluoroacetamide | Sulpho-succinates | Brassica sugar beet | Evesham area E. Anglia | May, 1959 May, 1959 | B B-C |
| 2. | Fluoroacetamide | alkyl aryl polyethylene glycol | Brassica | Evesham area | Nov., 1958 June, 1959 | A A |
| 3. | do. | do. | Sugar beet Sugar beet seed crop | East Anglia Duplicated ** | Nov., 1958 Aug., 1959 | A A |
| 4. | Demeton methyl | Benzoyl p-oxy diphenyl polyethylene glycol | Sugar beet | East Anglia | 1958, 1959 | A |
| 5. | Dimethyl methyl carbamoyl methyl phosphorthionate | Sulpho-succinates | Sugar beet | East Anglia | 1959 | B-B |
| 6. | do. | Sulpho-succinates and aryl alkyl polyethylene glycol * | Sugar beet | East Anglia | 1959 | A-B |

* Added as additional wetter.

** Courtesy of Dr. Dunning, Dunholme out-station (Rothampsted).

TABLE II
Legend:—Thompson sinking time test 20°C.

| Insecticide | Wetter * | Order of wetting power ** |
|---|---|---------------------------|
| Fluoroacetamide | Sulpho succinate | 3 |
| Fluoroacetamide | alkyl aryl polyethylene glycol | 1 |
| Demeton methyl (as marketed) | Benzoyl p-oxy diphenyl polyethylene glycol | 2 |
| Dimethyl methyl carbamoyl methyl phuphorothido thionate | Sulpho-succinate | 3 |
| do. | Sulpho-succinate + alkyl aryl polyethylene glycol | 2 |

* At amount to give surface tension at recommended field dilution of ca. 1/3000 of fluoroacetamide of 35-37 dyne/cm.

** Qualitative order (1 better than 2, better than 3).

sate and there is available in this country one which we have found to be equally effective, alkyl aryl polyglycol ether condensate. Both are non-ionic surfactants and, by the Draves sinking time test, much better wetters than the sulpho-succinates and neither is phytotoxic to any degree for most common plants, even at concentrations much higher than need be used in the field. The British products are to be very highly recommended for use

with root crop insecticide formulations and particularly for use with systemic insecticide compositions.

Much experience has been gained in the 1959 season when the weather was exceptionally hot and dry and the general conclusion is that no systemic insecticide has done as well as was anticipated from the very good results obtained previously, particularly in 1958. This

TABLE III
Legend:—Modified sinking time test 18°C.

| Insecticide | Wetter | Sinking time |
|---|--|--------------|
| Fluoroacetamide | Sulpho-succinate | 120 |
| Fluoroacetamide | Alkyl aryl polyethylene glycol | 60 |
| Demeton methyl (as marketed) | Benzoyl p-oxy diphenyl polyethylene glycol | 75 |
| Dimethyl methyl carbamoyl methyl phuphorothido thionate | Sulpho-succinate | 100 |

was doubtless due to some extent to the present tendency, regretted by many field workers, towards the use of lower volumes (and the temptation to the farmer equipped with a 25 gallon tank used, amongst other things, for spraying selective weed killers of the 2-4-D and 2,4,5-T types, to use this volume for all root crop sprays must be very strong) since much better results in aphid control were experienced when volumes of 50-100 gallons per acre were used. Nevertheless, this is only part of the story since it has now become clear that those systemics which were formulated with the non-ionic wetters referred to above were generally speaking, found to be superior to those using sulpho-succinates. Table I indicates in a general manner the experience with these two classes of wetter and are based on personal field experience of the author; they apply to low and medium volumes sprays (low = 23-30 g.p.a.; medium = 50-100 g.p.a.) and especially lower volume spraying.

Concurrently with work in the field, laboratory tests of various formulations were made and in particular the wetting power of these were quantitatively assayed.

Use was originally made of the modified Draves^{1, 1a} sinking time measurements as modified by Thompson;^{1a} it was found, however, to be difficult to obtain satisfactory repeat tests using this test unless the cotton hanks were perfectly clean and free from grease and oil and unless the tension in winding the cotton hanks was the same with each new hank made according to the specification.¹ The tests could be standardised using on each occasion as standard a specially purified sample of sodium dodecylbenzene sulphonate, homogeneous in its alkyl group; cationics obtainable in pure form are not suitable for this standardisation since the critical micellar concentration of these materials is so very dependent upon factors such as presence of inorganic materials, temperature and these factors are not easy to control. Sodium lauryl sulphate is difficult to obtain homogeneous in its alkyl group and has a long sinking time since it is not a

very powerful wetter commercial and sulpho-succinates would not be satisfactory unless there were some guarantee of homogeneity of the octyl group, that is, that esterification were done using pure n-octyl alcohol free from impurity and in particular free from secondary octyl (capryl) group.

Even so, results obtained put the various formulations into the same order of effective wetting power; (Table II) later, following discussions with the Ministry of Agriculture and with other knowledgeable authorities, the sinking time test was modified, using a copper hook of 0.5 g. weight and a standard length of untreated cotton tape and the results obtained, much more capable of satisfactory replication are given in Table III.

Fuller details of the modified test and also of the results given in Table I will be published later; this preliminary note is published for the benefit of formulation of systemic insecticides of the 1960 and subsequent seasons.

The author wishes to express his thanks to Dr. R. de B. Ashworth, of the Ministry of Agriculture for considerable assistance by way of suggesting tests for wetting power and by discussions, to Sondes Place Research Institute Ltd., for valuable co-operation in certain of the laboratory tests of insecticidal compositions and to Messrs. Associated Fumigators Ltd., for valuable collaboration and for permission to publish this preliminary note.

REFERENCES

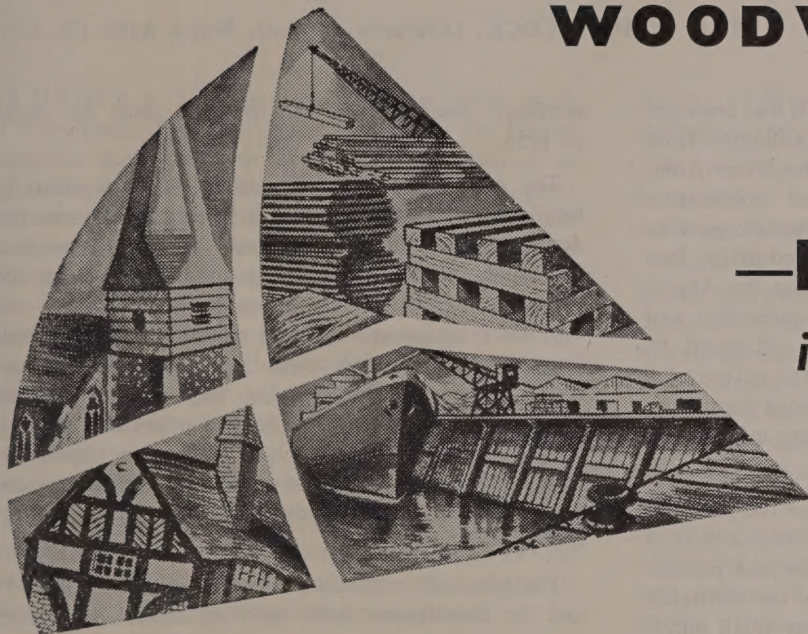
- ¹ Inst. Pet. 1P 92/47 (P), *Wetting Power of Wetting Agents Derived from Petroleum*.
^{1a} Thompson, 1958, J. Sc. Food. Ag., 600.

WOODWORM?

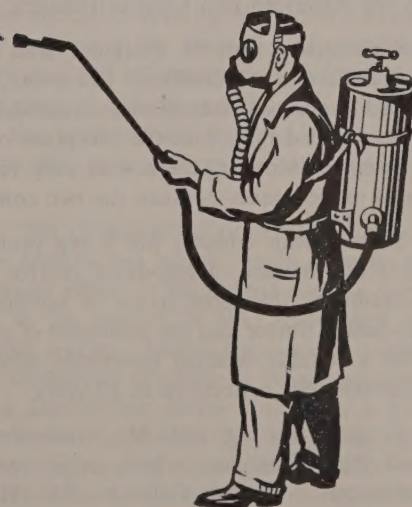
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REMINISCENCES OF AN AMERICAN TRIP

By S. W. HEDGCOCK. (*Executive Director, British Ratn Co. Ltd.*)

FOLLOWING a trip to America which was arranged to take in the Conference held at Washington from 20th-23rd October, 1958, to celebrate the Silver Anniversary of the National Pest Control Association Incorporated of America, Mr. S. W. Hedgcock, gave an interesting talk at a meeting of the Industrial Pest Control Association. It was indicated that the Americans had a more social approach to conferences and meetings and perhaps the speaker was influenced by this for his talk was intended more in the nature of a highly entertaining travelogue than a serious discussion. Nevertheless he produced some interesting information on the American Pest Control Industry.

A discussion with Dr. Hoskins, Head of the Entomological Section of California University, and several of his colleagues on rodenticides, insecticides and procedures, revealed that, with the exception of the resistance problem in America, there were only very small differences in techniques between the two countries.

Subterranean termites are a big problem in several parts of America. Methods of control include careful attention to the construction of buildings, the use of pre-heated timber and the treatment of surrounding soil with a suitable residual insecticide which can prevent infestation for periods up to 10 years.

From a meeting with Mr. Anderson, head of the Pied Piper Company which carries out pest control operations in British Columbia Mr. Hedgcock found that in view of the wide area to be covered, the employees are salesmen operators who sell preparations if the job is not big enough for service, sell service and carry out treatment at the same time to save travelling. There is possibly a greater use for the organophosphorous insecticides as opposed to chlorinated hydrocarbons because of the resistance problem.

Continuing Mr. Hedgcock gave an account of the background and history of the N.P.C.A. of America which makes an interesting comparison with that of the I.P.C.A.

The Association was formed in 1933 as the National Association of Exterminators and Fumigators Inc. and the purpose was to establish a uniform basis for an industry code under the requirements of the National Recovery Act. At the first convention on 2nd October, 1933 William Buettner was elected as the first president and remained in office for the following 20 years after which he became secretary and in 1946, Executive

secretary, remaining in this position until his death in 1953.

The Association devoted much of its early effort to business problems and although its programme was not designated as "Public Relations" it nevertheless was just that. Good internal relations were promoted through interchange of information and ideas on business practices and external relations were improved through exchange of technical "know-how." The need for training opportunities for the industry became apparent to a leader in the field of education in entomology, namely Professor Davis of Purdue University, who joined with the Association in promoting a "regional conference" for the industry at educational institutions.

The first such conference was held at Purdue in 1937 and the Conferences have been an annual event ever since.

In 1937 the Association became known as the National Pest Control Association Inc.

World War II brought new problems to the Industry and the Association became the leader in their solution. During this period it concerned itself with availability of chemicals, equipment and manpower. The Industry was declared to be "essential."

Towards the end of the war the first signs of the technical revolution in insect control practices became apparent with the release of DDT to the Association's Technical Committee for experimental evaluation. From this early start the technical evaluation programme has continued to expand and is recognised today as one of the Association's major services to members.

In the post-war years the Association continued to expand and in 1948 offices were established in New York City and a Technical Director added to the staff. Expansion of the technical education programme took place in this period with the publication of authoritative reference works and technical releases.

The N.P.C.A. purchased its own headquarters building in Elizabeth, New Jersey and, as a tribute to its pioneer leader, dedicated it as The William O. Buettner Memorial Building on 9th May, 1957. The Association has grown from the fifty men who met at the 1933 convention to an organisation with 800 active members in the U.S., 85 members outside its continental borders and 65 allied members.

ANIMAL SYSTEMIC

WITHIN a few weeks of the first cattle grub systemic—Etrolene—being released on the United Kingdom market, Cooper McDougall & Robertson in conjunction with Baywood Chemicals Ltd., gave a press conference to announce the release of **Co-Ral** which will be the second cattle grub systemic to be marketed in this country. In our previous article on Etrolene we gave an indication of the tremendous value of these chemicals and pointed out their advantages over the conventional derris treatment. However it must be admitted that the film shown at the above conference gave a more effective indication of the problem than mere words can convey. To save repetition the following account will be confined, as far as possible, to Co-Ral.

Co-Ral is the discovery of the Bayer Organisation of Western Germany who designated it as Bayer 21/199 for trial purposes, its chemical name is—0,0-diethyl 0-3-chloro-4-methyl 7-coumarinyl phosphorothioate.

Of the developments leading up to the discovery of Co-Ral it must be said that veterinary medicine, confronted as it is with a multitude of ecto- and endo-parasites which cause £millions of damage throughout the world, could not afford to ignore Dr. Schrader's discovery of the phosphoric acid esters which are of tremendous importance in agriculture and horticulture. In addition some of the products hitherto used against animal parasites are already failing and the introduction of new preparations has become imperative.

Although the first phosphoric acid esters were considered too toxic for warm blooded animals the search for materials suitable for use in the veterinary field continued. In 1950 the first favourable report on the use of these chemicals in the control of cattle ticks—the preparation was named Ticodol—came from John Legg of Brisbane, Australia. However research continued particularly with regard to finding compounds which could be better tolerated by animals and eventually it became possible to use such compounds for systemic treatment. Some of them, however, hydrolysed in the stomach so rapidly that they were prevented from exerting their insecticidal or parasiticidal action. Not all of these esters are chemically stable, which, in turn, is an advantage since the rapid decomposition of the compound is desirable for the subsequent use of the produce of treated animals.

Eventually products were found which offered the latter advantage and the opportunity of remaining in the animal's system long enough to exert their pesticidal effect before being decomposed. One such compound—

Bayer L 13/59 (Neguvon)—was found to kill grubs when introduced into the animals system orally.

At this stage the most promising products were sent to the U.S.A. to be tested by the U.S.D.A. The results confirmed those obtained by the Bayer research workers.

Following these results closer investigations were carried out from which it was found that some of these chemicals could be introduced into the animal's system by external application i.e. via the skin, and others could be introduced into the blood stream by internal application i.e. via the mouth. It is thus possible to kill cattle grubs underneath the skin; scab mites lodging within the skin and blood sucking insects, by external or internal application. To mention a few examples, all the fleas inhabiting a dog's coat fall off dead within half an hour of the dog being given an oral dose of Neguvon; horse bots (larvae of the *Gastrophilus* fly) and nasal bots (larvae of *Oestrus* fly) in sheep can be killed with a similar treatment.

However there still remained the problem of finding formulations for topical use which would provide a long-term insecticidal effect on the animal coat—a very important point in the control of ticks, blow flies in S. Africa and Screw worms. Such a formulation would also prevent the infestation of cattle in South America with the dreaded *Dermatobia* larvae which has a life cycle similar to that of the Warble fly. This then, has been the chief aim leading up to the development of Co-Ral. In the big cattle areas of the U.S. the formulation has to be effective in controlling screw worms—the larvae of *Callitroga americana* which parasitises wounds; horn flies—*Siphona irritans* a blood sucking insect and warbles—*Hypoderma* spp.

However, in the U.K. only warbles are of importance and the formulation of Co-Ral to be used over here is specifically designed to this end. It need not possess the topical retention powers which may be required to combat other insects.

Co-Ral, in contrary distinction to Etrolene, is applied externally and is designed to pass through the skin and into the blood stream. It is therefore very important that sufficient insecticide reaches the skin and in the U.S. high pressure spraying equipment is used to force the chemical through the animal's thick winter fur. In conducting their trials Cooper McDougall & Robertson at first followed the American procedure but later found that a more certain and consistent method of ensuring an efficient insecticide/skin contact was to use smaller quantities of insecticide at higher concentrations, apply

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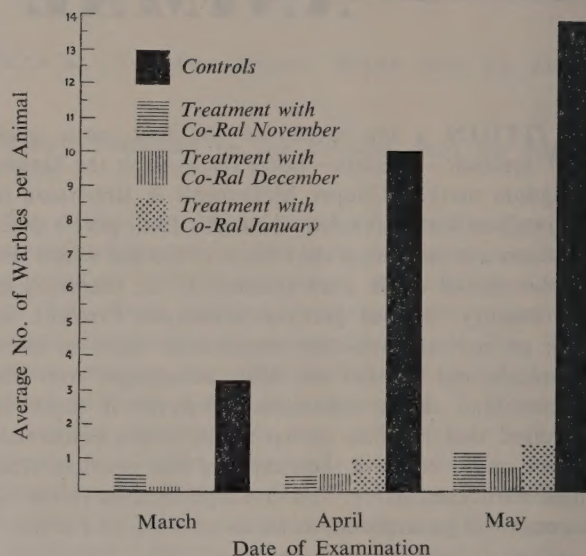
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them by means of a jug, allow the material to soak into the back and then rub it well in with a scrubbing brush. By this simple means consistent results were attained and in all later trials this method was used. Subsequently it has become the recommended method of application for this country.

From the accompanying chart, which summarizes the results of some of the trials, it can be seen that Co-Ral treated groups are virtually free from warbles and that the untreated control groups approached 100% infestation. In one series of experiments 53 out of 71 of the treated animals showed no warbles at any time during the season whereas only one animal out of 33 control untreated animals was seen to be free from infestation.

With regard to the safety problem no toxic or side effects have resulted from the application of Co-Ral. Bayers in Germany have treated 325 cattle with Co-Ral at an application rate of 1 pint of a 2% emulsion for animals up to 1½ years old and 2 pints for older cattle. Among the test animals were 20 heifers in the third to seventh month of pregnancy and none of them showed any toxic effects from the treatment. All available evidence suggests that external application of Co-Ral is well tolerated by the animal though to be on the safe side it is recommended that, at present, it should not be used to treat calves of less than six months of age or any sick animals.

There is little doubt that the next few years will see the emergence of a number of new drugs for the control of warbles and other parasites. Individual farmers will have it in their power to cut down the rate of infestation in their herds to negligible proportions and it is believed that Co-Ral may be one of the first steps on the road to the control or even the eradication of the warble and other expensive pests.

African Pyrethrum

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insects
develop no
significant resistance

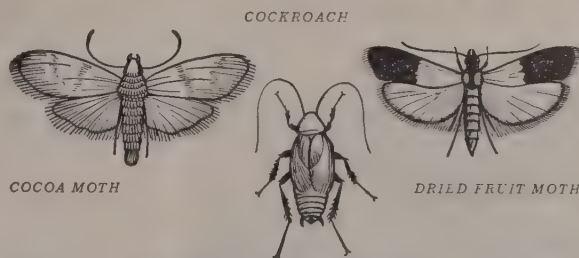


The outstanding importance of African Pyrethrum is obvious from the point of view of both efficiency and economy. It is the only insecticide to which insects have shown no resistance of any practical significance. Its economy lies in the fact that it can be used with a synergist or with other insecticides and still retains its properties. Although African Pyrethrum has a powerful knock-down property on insects, it is non-poisonous to humans and animals. Further information about the many advantages and applications of African Pyrethrum can be obtained from:

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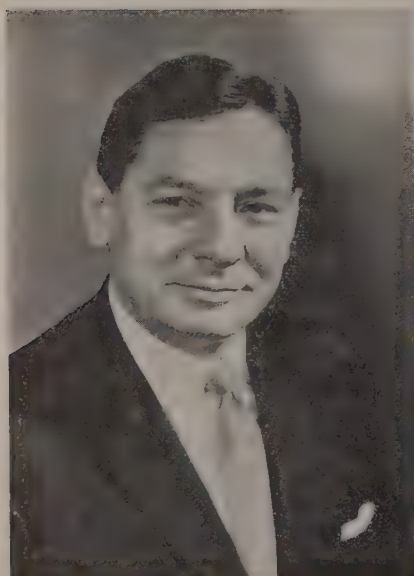
The type has been cast and set, proofs corrected, paged and printed, another issue of 'Pest Technology,' is well on the way to completion . . . but there is no resting on our laurels—oh no! Tomorrow, we shall be printing or preparing, not only the December issue but also an infinite variety of catalogues, letter headings, brochures, labels, booklets and other forms of commercial literature and stationery. Perhaps we could give the printing service and quality you have been looking for—could we? Why not try us and see!

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PEOPLE and PLACES



Mr. John F. Gates, Regional Director, Africa, Cyanamid International

Cyanamid International Appointment

Mr. John F. Gates, regional director for Central and Southern Africa, Cyanamid International, has been appointed regional director Africa. He joined Cyanamid in 1925 and was managing director of Cyanamid of Great Britain Limited during the war when he served with a Home Guard battalion of the Hertfordshire Regiment. His headquarters will be in Rome.

Mr. Gates, who was also a former manager of Cyanamid International's mining chemicals department, will study Cyanamid's expansion programme in his territory and will advise on general developments and trends in Africa.

National Certifying Authority for Herbage Seeds

Mr. W. E. Jones, B.Sc., has been appointed by the Ministry to succeed Mr. J. A. McMillan, C.B.E., B.Sc. (Agric.), as Chairman of the National Certifying Authority for Herbage Seeds.

Plant Health Inspectorate

A new Plant Health Inspectorate for England and Wales has been set up by the Ministry with Mr. C. E. Pearson, N.D.A. as Chief Inspector. This implements the recommendations of the Arton Wilson Committee which was appointed to review the provincial and local organisation and procedures of the Ministry of Agriculture, Fisheries and Food. The Inspectorate will take over plant health work under the Destructive Insects and Pests Acts as well as the inspections required in connection with plants exports hitherto carried out by the National Agricultural Advisory Service.

Apart from the Chief Inspector there will be 23 Inspectors who have been stationed to cover the main ports and horticultural growing areas. A list of the Inspectors and their stations is below.

The maintenance of an efficient and uniform plant health control throughout the country is important to prevent, in the interests of growers in this country, the introduction and spread of injurious plant pests and diseases and to meet the United Kingdom's obligations as a signatory to the International Convention for the Protection of Plants and Plant Products.

| Area | Officer | Official Station |
|--|---|---|
| 1. London Thames ports Middlesex | W. R. N. Barnett J. A. Hewitt T. Parish | Whitehall Place (West), London, S.W.1. <i>Trafalgar</i> 7711. |
| 2. Northumberland Cumberland Westmorland Durham Yorks. N. Riding | R. A. Urwin | Regional Office, Government Buildings, Kenton Bar, Newcastle-on-Tyne, 3. <i>Newcastle-on-Tyne</i> 86-9811 |
| 3. Yorks. W. Riding | C. Crompton | Regional Office, Block 2, Government Buildings, Lawnswood, Leeds, 16. <i>Leeds</i> 67-4451 |
| 4. Yorks. E. Riding Port of Grimsby | G. Rough | Divisional Office, St. Mary's Manor, Beverley, Yorks. <i>Beverley</i> 81255 |
| 5. Lancashire Cheshire Flint Denbigh Anglesey Caernarvon Merioneth Montgomery | R. Varley H. E. Halsall | Room 218, Royal Liver Buildings, Liverpool, 3. <i>Liverpool Central</i> 0209 |
| 6. Nottingham Derby Leicester Northampton Rutland Stafford | Mrs. P. Bates | Regional Office, Block 2, Government Buildings, Chalfont Drive, Western Boulevard, Nottingham. <i>Nottingham</i> 77711 |
| 7. Lincolnshire Lindsey (excluding Grimsby) Kesteven Holland | E. Neal | N.A.A.S. Office, Government Buildings, Kirton, Boston, Lincs. <i>Kirton</i> 391 |
| 8. Isle of Ely Soke of Peterborough Norfolk (West of a line Hunstanton-Methwold) | Vacancy | Divisional Office, Government Buildings, High Street, March, Cambs. <i>March</i> 2351 |
| 9. Norfolk (East of a line Hunstanton-Methwold) Suffolk | E. Garrett | Divisional Office, Sprowston Hall, Wroxham Road, Norwich. <i>Norwich</i> 46262 |

| Area | Officer | Official Station | Notes from the Dairy Show |
|--|--------------------------|---|---|
| 10. Cambridge Huntingdon Bedford Hertford | R. R. Burles | Regional Office, Block C, Government Buildings, Brooklands Avenue, Cambridge. <i>Cambridge 58951</i> | Walter Gregory & Co. Ltd., exhibited their animal husbandry products which include fly sprays and sheep and cattle dips. |
| 11. Essex | P. Boughey | Government Buildings, Essex Street, Colchester, Essex. <i>Colchester 4463/4</i> | Boots Pure Drug Co. showed a wide range of their farm products. |
| 12. Kent (East of a line Rochester, Maidstone, Tunbridge Wells) | W. L. Rudland | N.A.A.S. Sub-Centre, Olantigh Road, Wye, Ashford, Kent. <i>Wye 201</i> | Shepherd's Aerosols Ltd. included the "Aerovap" amongst their ex- hibits. This instrument is a small scientifically designed electric volati- lizer, thermostatically controlled, containing a cup of insecticide which, by heat volatilization becomes an aerosol dispersing extremely fine particles imperceptible to the eye or touch. The aerosol produced is said to control, cattle flies, house flies, warble flies, mosquitoes, red mite, green flies, red spider, and other insect pests. |
| 13. Kent (West of a line Rochester, Maidstone, Tunbridge Wells) | T. H. Brunt | Divisional Office, Crown House, Sittingbourne Road, Maidstone, Kent. <i>Maidstone 55521</i> | |
| 14. Sussex | Miss P. M. Stent | N.A.A.S. Office, 208, High Street, Lewes, Sussex. <i>Lewes 1290</i> | Imperial Chemical Industries showed some of their "Gammex- ane" and "Lorexane" preparations for the control of insects, the products "Helmox," "Elimix" for the control of internal helminths and "Cetaped" for foot rot control. |
| 15. Surrey | F. A. Bush (N.A.A.S.) | Divisional Office, Elgin, London Road, Guildford, Surrey. <i>Guildford 62881</i> | |
| 16. Oxford Buckingham Berkshire | A. G. Graves | Regional Office, Government Buildings, Coley Park, Reading, Berks. <i>Reading 54881</i> | H. E. Helman & Co. (Insecticides) Ltd. manufacturers of a wide range of pest control products included a new exhibit "Hel-Gene" an insecticide in concentrated form for the spraying of poultry houses, barns etc. |
| 17. Hampshire Isle of Wight | A. P. King | Divisional Office, Government Buildings, Christchurch Road, Winchester, Hants. <i>Winchester 2334</i> | |
| 18. Somerset Dorset Devon Cornwall Isle of Scilly | N. Deakin | Divisional Office, Government Buildings, Alphington Road, Alphington, Exeter, Devon. <i>Exeter 56951</i> | C. F. Gerhardt Ltd. principle manufacturers of Warfarin prepara- tions also exhibited "Thram" a spray for poultry to prevent cannibal- ism, and Dethlac an aerosol insecticidal laquer containing diel- rin, which gives 12 months protection against cockroaches, ants and other crawling insects. It has now been in use for 3 months or more and Local Authorities from over the whole of Great Britain are said to be pleased with the results obtained. Dethlac is now being exported to some 10 countries, the largest sales being to East Africa. |
| 19. Gloucester Wiltshire Monmouth Brecon Radnor Pembroke Carmarthen Cardigan Glamorgan | P. Evans | Regional Office, Block 3, Government Buildings, Burghill Road, Westbury-on-Trym, Bristol. <i>Bristol 62-2851</i> | |
| 20. Warwick Worcester Hereford Salop | F. E. Skinner | Divisional Office, Block C, Government Buildings, Whittington Road, Redhill, Worcester. <i>Worcester 3421</i> | From the Seaweed (Agriculture) Ltd., stand we heard that some interesting experiments are being conducted in Ghana, where Pybuth- rin/Maxicrop (liquified seaweed) mix- tures are being sprayed on cocoa plants. The Pybuthrin is supplied by Cooper McDougall & Robertson. |

NOTE—The vacancy existing at March will be filled temporarily by Mr. Garnett covering the whole of Norfolk, and Mr. Neal covering Isle of Ely and Soke of Peterborough.

NEWS and POWER SPRAYING

Reduced Prices for Winter Washes

The Murphy Chemical Company have announced a reduction in the prices of their four most popular winter washes as follows:—

Per 40 gallon drum
Old Price New Price

| | | | |
|-----------------|-------|-------|--|
| Emulsion | | | |
| Mortegg .. | 152/6 | 140/- | |
| Miscible | | | |
| Mortegg .. | 204/- | 190/- | |
| Ovamort .. | 211/6 | 195/- | |
| Special Ovamort | 217/6 | 200/- | |

Allman's to use American Product

Allman & Co., of Birdham, inform us that they have been appointed the sole concessionnaires of the American Hypro Rollervane pump for the United Kingdom and Eire.

Needless to say Hypro pumps will be used extensively in their sprayer range for 1960 and the Company will be pleased to deal with all enquiries.

Other news from this Company concerns the addition of a new High Pressure Washing Unit to their established range of Implement Washers. Designed and produced by E. Allman & Co., the Unit will give a jet of water at 400 p.s.i. The jet can easily be cut down to a fine mist by the operator for rinsing purposes. This is done with the Allman Junior Washing Gun which is standard equipment.

Power Sprayer Production

In the M.A.F.F. estimates based on Manufacturers' Returns collected by the Departments of Agriculture and by the Board of Trade it is revealed that for the period April-June, 1959, there was a significant increase in the production of Ground Crop Sprayers compared with the corresponding period in 1958. The production of Orchard Sprayers, however, decreased slightly.

Actual figures are:—

| | 1958 Production for | | 1959 Dispatches for | |
|--|---------------------|--------|---------------------|--------|
| | Home | Export | Home | Export |
| Ground Crop Sprayers .. | 1,657 | 81 | 1,727 | 249 |
| Orchard Sprayers .. | 290 | 122 | 213 | 111 |
| Scrub Cutters, bracken breakers etc. (tractor drawn) | 175 | 20 | 201 | 78 |

The new High Pressure Washing Unit consists of a twin cylinder pump with special liners made by a patented process of special ceramic material and cannot be damaged by abrasive materials. The pump is driven by a 2½ h.p. four stroke air cooled petrol engine fitted with a 6-1 reduction gear box and has recoil rope starting.

Each unit is equipped with 30 ft. $\frac{3}{8}$ in. delivery hose and 15 ft. of suction hose with 15 ft. return hose.

The return hose allows surplus water to be returned to source thus conserving the supply. Whilst working at 400 lbs. p.s.i. the consumption

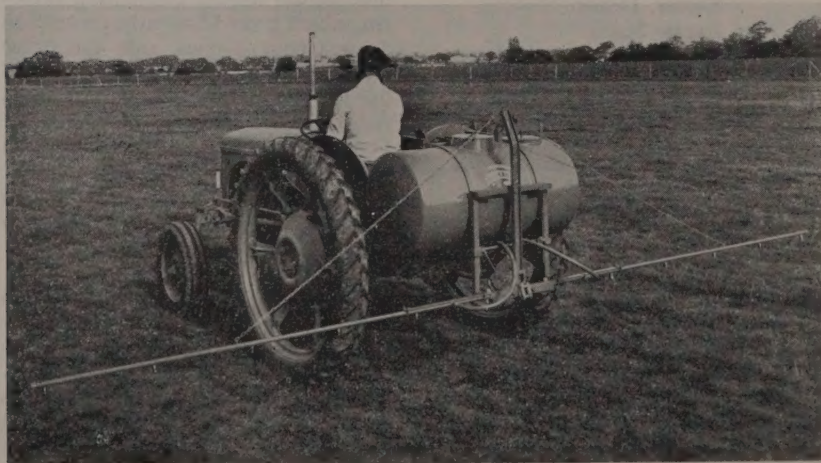
is 3½ gallons of water per minute. There is a very efficient foot strainer fitted to the suction hose.

The machine is extremely portable, one man can carry it without difficulty, and the price complete with all accessories is £127 10s. 0d.

The new High Pressure Unit is an addition to the already established Allman range of Implement Washers.

This Company has been very active in the past few weeks for in addition to the above they have added a new machine to be known as the **Speedispray 60** to their already established line of sprayers. It consists of a cylindrical 60 gallon capacity tank, galvanized after manufacture. Full range of adjustments for height, can be obtained on the 18 ft. wide spray bar and the unit will be fitted with the new Allman-Hypro pump. Although classed as a low volume machine, the Speedispray 60 will make applications of 40 gallons to the acre at 4 m.p.h.

They are also making available on a National basis the special dropleg, developed during 1957, for the booms of their spraying machines for the application of Metasystox. This device enables the chemical to be applied in a narrow band directly onto the Sugar Beet plants, thus there is a considerable saving in chemical reducing the cost by approximately 50%.



Speedispray 60

NEWS — PRODUCTS — EVENTS

Wild Oats—Chemical Control in Sight

Fisons Pest Control Limited and the Spencer Chemical Company of Kansas City, U.S.A., announce an agreement whereby the development, manufacture and distribution of an important new herbicide in certain territories will be carried out by the British Company. It is hoped that this will lead to closer collaboration between the two companies.

Initial trial work in 1959, under the code name S.847, has shown that this new low-toxicity weedkiller, to be known as "Carbyne," shows great promise for the control of wild oat in wheat, barley, peas, sugar beet and other important crops.

Further extensive trial work is being arranged for 1960 to prove the value of this chemical to the farming community in Britain and other countries with the hope of making the product available to farmers in Spring, 1961.

Under the agreement between Geigy (S.A.) Basle, and Fisons Pest Control, "Carbyne" will be distributed in certain European territories by Geigy.

New Smoke Pesticide Against Moles

Moles can cause extensive damage each year to crops, lawns, gardens and forestry and orchard nurseries. The usual methods of control e.g. trapping and poison baiting have been described as haphazard. As a further aid for the control of these pests the Fumite Division of Waco Ltd., have recently brought out a new **Mole Smoke**, the first ever of its kind, which has proved itself remarkably efficient against these pests. Original trials on 15 acres of land, which had been severely infested with moles over a number of years, showed that virtually complete control could be attained.

The active ingredients are sulphur dioxide, sulphur trioxide, carbon bisulphide, and hydrogen sulphide, all of which are lethal to small mammals. When lighted and introduced into the entrance hole beneath

the mole hill the Mole Smoke Generator produces dense fumes which are carried through the run and kill the moles instantly. The company have found that it is essential to methodically level mole hills each night and to treat fresh mole hills each morning. Completely safe to use, Mole Smoke also deals effectively with rats and rabbits.

Amino Triazole

The Standardised Disinfectants Company Ltd., have produced a leaflet on Weedazol T-L which is manufactured by A. H. Marks & Company Ltd., under licence from Amchem Products Ltd., Ambler, U.S.A. and distributed by S.D.C.

This weedkiller is a concentrated liquid formulation of amino triazole and has proved valuable for the control of couch grass and many other perennial weeds which otherwise prove difficult to control. The mode of action, advantages, dosage rates, time of application, safety precautions etc. are listed in this leaflet.

Shell Liquid Seed Dressings to be Exhibited at Smithfield

This year Shell Chemical Company will be devoting half their Smithfield stand to demonstrating "Panogen" and "Astex" the first liquid seed dressings to become commercially available in this country. Visitors will be able to see a working Model "A" Seed Treater, the machine designed especially for the application of these materials, and also a "cut away" model, showing how the machine treats seed accurately, speedily and efficiently. Other exhibits will include treated and untreated seed, germination tests showing growth both from treated and untreated seed and a comparison of their resistance to fungicidal attack.

The rest of the stand will show the use of "Nitra-Shell," Shell's nitrogenous fertiliser, and photographs will illustrate the Company's fertiliser plant at Shell Haven. Panels and

photographs will illustrate the advantages of extending the grazing season by careful selection of grasses and management. Details are also given of the National Grassland Demonstration, sponsored by Shell Chemical Company which will take place at Hatch Warren Farm, Basingstoke, next June.

Spraying Comfort

Protective neoprene pads, manufactured by the Expanded Rubber Company Limited, Croydon, Surrey, have been added to the "Micro-nette" a portable sprayer manufactured by Micron Sprayers Ltd., Birmingham.

The pads have a cushioning effect that prevents the frame of the equipment from rubbing and moreover the neoprene, which is a closed cell structure, manufactured from synthetic rubber, is unaffected by spray chemicals.

Pests on Root Crops

In the Monthly Agricultural Report published by the Ministry of Agriculture, Fisheries and Food on 9th October it is stated that Virus Yellows have now become widespread on Sugar Beet, however, the yield per acre of roots is expected to be above average. Turnips and Swedes are badly affected by mildew and aphid attacks in many areas and crops are poor. The yield is expected to be 4 tons lower than the five-year average of 15.7 tons. Weed infestation and aphid attacks of kale are reported from several areas.

British Weed Control Conference

The Weed Control Council have decided to hold a Conference during November, 1960. This will be held at The Grand Hotel, Brighton, from 7th November-10th November, 1960.

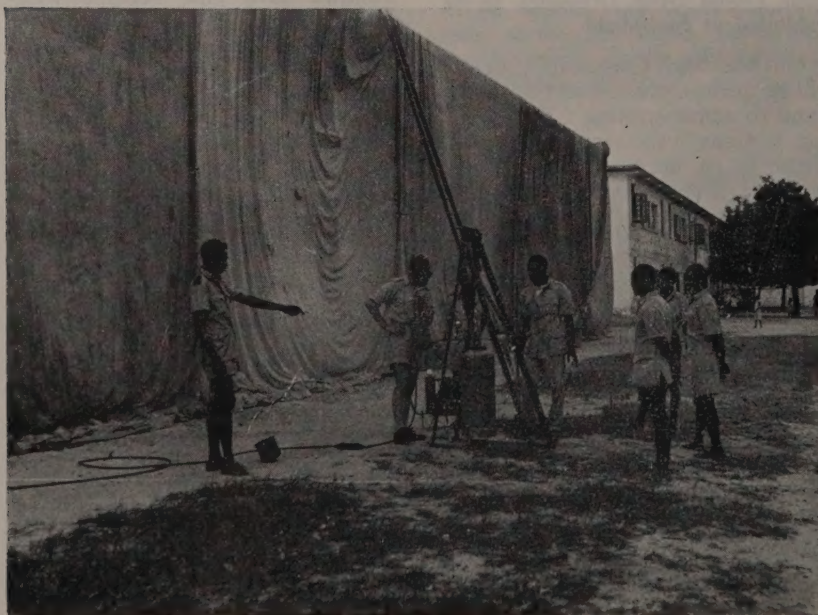
All correspondence and enquiries in connection with the Conference should be addressed to: The Secretary, The Weed Control Conference Committee, 52, Bedford Row, London, W.C.1. Tel. CHAncery 4504.



Fumigation in Flats

The London Fumigation Co. (Africa) Ltd., Associates of the London Fumigation Co. Ltd., recently carried out the fumigation of flats on a housing estate at Port Tudor, Africa. The interesting point

about this particular operation, in which the fumigant used was Methyl Bromide and the pest involved was the bed bug, is that the houses were covered with fumigation sheets due to the difficulty of sealing in any other way.



Department of Agriculture Appointments

Sir Richard Manktelow will be retiring from the public service in the New Year.

Mr. Eric Roll, will return to the Department as Deputy Secretary at the end of the year, on completion of his secondment to the International Sugar Council.

Mr. Bishop has been promoted Deputy Secretary, thus filling the post of Deputy Secretary left vacant since the retirement of Sir Edmund Harwood, K.B.E., C.B.

Sir Richard Manktelow joined the Department of Agriculture in 1914. After service in the Army during the first World War, he returned to the Department. After occupying a wide variety of posts, in which he has been associated with many of the developments in agricultural policy, he was promoted to the rank of Deputy Secretary in 1954. He received the K.B.E. in 1957.

Mr. Roll, who has been serving with the International Sugar Council for the past two years, will be returning to the Department on 1st January, 1960.

Fly Film

Cooper McDougall & Robertson, Berkhamsted, Herts, have produced a film entitled **Everyman's Enemy** dealing with the breeding, habits and control of house flies. The film, which lasts approximately 20 minutes, is in colour and contains some excellent close up shots of flies and maggots. It was produced with the co-operation of several firms and is not intended as an advertising plug. Obtainable on loan this excellent film should be of considerable interest in directions concerned with public health work and industrial hygiene.

Poultry Imports from Guernsey and Sark Prohibited

From 2nd November, 1959 imports of live poultry, hatching eggs and uncooked poultry carcasses from the islands of Guernsey and Sark will be prohibited. This precaution has been taken by arrangement with the appropriate authorities in Guernsey and Sark as a measure of common disease control.

Imports from the islands of Jersey and Alderney will continue to be permitted.